



1  
00:00:07,149 --> 00:00:11,080  
This Week at NASA...

2  
00:00:11,080 --> 00:00:15,849  
Outside the International Space Station, Expedition  
36 Flight Engineers Chris Cassidy of NASA

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00:00:15,849 --> 00:00:21,430  
and Luca Parmitano of the European Space Agency  
conducted a 6-hour, 7-minute spacewalk July

4  
00:00:21,430 --> 00:00:27,170  
9 to replace a communications receiver, relocate  
grapple bars for future spacewalks and install

5  
00:00:27,170 --> 00:00:32,439  
cables for a future Russian laboratory module.  
The spacewalk was the fifth for Cassidy and

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00:00:32,439 --> 00:00:39,439  
the first for Parmitano, who became the first  
Italian astronaut to walk in space.

7  
00:00:39,699 --> 00:00:44,940  
NASA's Mars Curiosity rover has departed its  
last science target in the "Glenelg" area

8  
00:00:44,940 --> 00:00:50,940  
and begun a many-month journey to the base  
of Mount Sharp, the mission's main destination.

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00:00:50,940 --> 00:00:56,070  
In the middle of Gale Crater, Mount Sharp  
exposes many layers where scientists anticipate

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00:00:56,070 --> 00:01:03,070  
finding evidence about how the ancient Martian  
environment changed and evolved.

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00:01:03,280 --> 00:01:07,689

NASA hosted a media teleconference to share details of a new report that will help define

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00:01:07,689 --> 00:01:13,250

science objectives for the agency's next Mars rover. Prepared by the NASA-appointed Mars

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00:01:13,250 --> 00:01:18,670

2020 Science Definition Team, the report is an early, crucial step in developing the mission

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00:01:18,670 --> 00:01:20,810

and the rover's prime science objectives.

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00:01:20,810 --> 00:01:27,670

"It really fits well within our approach, our science strategy for Mars of seeking the

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00:01:27,670 --> 00:01:29,210

signs of life."

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00:01:29,210 --> 00:01:34,070

"There's really an enormous amount of room for creativity and innovation and partnership

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00:01:34,070 --> 00:01:41,070

that will allow us to send this next rover to Mars in 2020 that will help us answer some

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00:01:55,880 --> 00:01:57,810

of these core questions."

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00:01:57,810 --> 00:02:02,740

NASA Associate Administrator for Human Exploration and Operations Bill Gerstenmaier was one of

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00:02:02,740 --> 00:02:07,810

the featured presenters at The Target NEO 2 workshop at Washington's National Academy

22  
00:02:07,810 --> 00:02:13,450  
of Sciences. Discussion at the event focused  
on the technical challenges and new capabilities

23  
00:02:13,450 --> 00:02:19,080  
needed for successful robotic and human exploration  
of asteroids and other Near Earth Objects

24  
00:02:19,080 --> 00:02:24,529  
-- including NASA's newly proposed initiative  
to capture and redirect an asteroid for human

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00:02:24,529 --> 00:02:26,040  
study.

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00:02:26,040 --> 00:02:32,989  
A press conference in Washington about NASA's  
Green Propellant Infusion Mission, or GPIM,

27  
00:02:32,989 --> 00:02:38,129  
gave agency officials an opportunity to discuss  
the mission's first thruster pulsing test.

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00:02:38,129 --> 00:02:43,989  
The GPIM program is demonstrating a high-performance  
"green" fuel in space which offers nearly

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00:02:43,989 --> 00:02:48,180  
50 percent better performance and safer handling  
than traditional hydrazine.

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00:02:48,180 --> 00:02:52,389  
"With this GPIM, the propellant we're talking  
about today, you can load that spacecraft

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00:02:52,389 --> 00:02:56,370  
and ship it and that changes really the game,  
right? Of how we do spacecraft processing."

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00:02:59,049 --> 00:03:03,569  
NASA Administrator Charlie Bolden joined Goddard  
Space Flight Center Director Chris Scolese

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00:03:03,569 --> 00:03:08,319  
for a town hall meeting with employees in  
the Building 8 auditorium, where Bolden praised

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00:03:08,319 --> 00:03:13,099  
the Goddard community for ongoing contributions  
to the agency's ground-breaking scientific

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00:03:13,099 --> 00:03:13,480  
achievements.

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00:03:13,480 --> 00:03:18,400  
"It's hard to find somebody who can compete  
with what you do and that's because of the

37  
00:03:18,400 --> 00:03:23,319  
incredible amount of work that you do in Earth  
science. (butt) I love the term we take the

38  
00:03:23,319 --> 00:03:28,329  
impossible and make it possible. Or we turn  
science fiction into science fact and we do

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00:03:28,329 --> 00:03:35,329  
that every single day."  
NASA and Aerojet Rocketdyne of West Palm Beach,

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00:03:40,430 --> 00:03:44,799  
Fla., recently completed testing in Glenn  
Research Center's Rocket Combustion Lab of

41  
00:03:44,799 --> 00:03:50,239  
a rocket engine injector nozzle made with  
advanced "3D printing." technology. This could

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00:03:50,239 --> 00:03:55,279

lead to more efficient and cost effective manufacturing of rocket engines.

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00:03:55,279 --> 00:04:01,609

The successful test at NASA's Marshall Space Flight Center of a pressurized, large cryogenic

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00:04:01,609 --> 00:04:06,329

propellant tank made of composite materials -- instead of metal, marked a major space

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00:04:06,329 --> 00:04:11,879

technology development milestone for the agency. The new composite tank and is considered game

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00:04:11,879 --> 00:04:16,669

changing because it may reduce the cost and weight of future launch vehicles and other

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00:04:16,669 --> 00:04:19,750

space missions.

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00:04:19,750 --> 00:04:25,020

During NASA's first news briefing using Google+, the agency announced that new mapping data

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00:04:25,020 --> 00:04:29,970

from the Interstellar Boundary Explorer, or IBEX mission shows that the solar system's

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00:04:29,970 --> 00:04:36,449

tail is shaped like a four-leaf clover. Scientists describe the heliotail, as they call it, in

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00:04:36,449 --> 00:04:42,300

a paper published in the July 10 edition of the Astrophysical Journal.

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00:04:42,300 --> 00:04:47,720

On July 15, 2011 -- Pacific Daylight Time,  
after nearly four years of travel through

53  
00:04:47,720 --> 00:04:52,919  
the solar system, NASA's Dawn spacecraft was  
was gently captured in orbit by the asteroid

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00:04:52,919 --> 00:04:57,919  
Vesta -- making Dawn the first spacecraft  
to orbit a main belt asteroid in the region

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00:04:57,919 --> 00:05:03,470  
between Mars and Jupiter. It spent more than  
13 months examining the gigantic protoplanet

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00:05:03,470 --> 00:05:08,789  
with all of its sensors before leaving in  
September 2012. Dawn is now headed for the

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00:05:08,789 --> 00:05:15,789  
dwarf planet Ceres, the largest body between  
the sun and Neptune not yet visited by a spacecraft.

58  
00:05:15,930 --> 00:05:17,710  
And that's This Week @NASA.